Section 2 Global value chains

In the previous section, we surveyed trends in Japan's trade and investments. In their background lies the flow of goods (GVC: Global Value Chains) that connects Japan's domestic companies and their overseas affiliates. Although Japan's trade includes not a small part which has no relation with GVC, it is important to grasp the trends, because more than half of the exports of domestic manufacturers are carried out from parent companies to their overseas affiliates. In this section, we will examine the actual status of GVC with Japan at its center.

1. Overseas development of Japanese companies

Japanese companies have actively expanded overseas direct investment and pushed forward overseas development through the establishment of overseas affiliates. According to the data of *Basic Survey on Overseas Business Activities* (Ministry of Economy, Trade and Industry), the number of overseas affiliates of Japanese companies has steadily increased as a trend, although it showed a temporary decline at economic shocks such as the global financial crisis, and currently around 25 thousand companies in total are operating overseas all over the world (manufacturing: around 11 thousand, non-manufacturing: around 14 thousand) (Figure II-3-2-1). Looking at the data by industry, the number of companies in the manufacturing industry amounts to less than 50%, and since the global financial crisis the non-manufacturing industry has been gradually increasing its share.²⁴²

²⁴² In Figure II-3-2-1, the number of affiliates and sales volume appear to be increasing drastically in FY2012, because the capturing rate at survey implementation increased.



Figure II-3-2-1 Changes in the number of Japanese overseas affiliates

Source: Basic Survey on Overseas Business Activities (METI)

Here, first, we look at the changes in number of companies, sales volume, and ordinary profit of Japanese overseas affiliates operating in the world, and then we survey their locations in the world and features of each region.

Sales volumes of overseas affiliates have been steadily increasing except for temporary decreases such as at the time of the global financial crisis (Figure II-3-2-2). Looking by industry, sales volume of manufacturing is staying at the level of close to 50%. On the other hand, ordinary profit shows strong fluctuation compared with sales volume (Figure II-3-2-3). It had smoothly increased until the global financial crisis; however, after that it has repeated decline and recovery and shows sluggishness. By industry, the share of manufacturing had decreased and the share of non-manufacturing had increased until the global financial crisis; however, after that there are also some signs of an increase of the share of manufacturing.



Figure II-3-2-2 Changes in sales of Japanese overseas affiliates

Source: Basic Survey on Overseas Business Activities (METI)





Source: Basic Survey on Overseas Business Activities (METI)

In such circumstances, the overseas production ratio of Japanese manufacturing has been maintaining an upward trend, and the importance of overseas operation has been increasing (Figure II-3-2-4). Most recently, the overseas production ratio is 23.8%, so close to a quarter of total production of Japanese manufacturing in the world is carried out overseas.²⁴³ If you focus on Japanese companies having overseas affiliates, nearly 40% of their production is carried out overseas. By industry, transportation equipment, general-purpose machinery, information and communication electronics equipment, etc. are actively expanding overseas operation with high overseas production ratios (Figure II-3-2-5).



Figure II-3-2-4 Overseas production ratio of Japanese Manufacturing

Note: All domestic corporation bases. Sales of domestic corporations are from data of *Financial Statements Statistics of Corporations by Industry* (Ministry of Finance). Solely manufacturers are picked up for both overseas and domestic.

Overseas production ratio = Sales of overseas affiliates / (sales of overseas affiliates + sales of domestic corporations)

Source: Basic Survey on Overseas Business Activities (METI)

²⁴³ Calculated from FY2016 sales of corporations belonging to the manufacturing. The ratio of sales of overseas manufacturing affiliates (around 124 trillion yen) against total sales (around 519 trillion yen) of domestic manufacturing corporations (around 396 trillion yen) and overseas manufacturing affiliates (around 124 trillion yen).



Figure II-3-2-5 Overseas production ratio of Japanese manufacturing affiliates (by industry, FY2016)

Note: All domestic corporation bases. Sales of domestic corporations are from data of *Financial Statements Statistics of Corporations by Industry* (MOF). Solely manufacturers are picked up for both overseas and domestic.

Overseas production ratio = Sales of overseas affiliates / (sales of overseas affiliates + sales of domestic corporations)

Source: Basic Survey on Overseas Business Activities (METI)

As the destination of overseas operation, the presence of the Asian region is increasing. Looking at changes in the number of affiliates established by region, in manufacturing industries, the number of establishments remains unchanged in the U.S. and Europe, but it is increasing in Asia (Figure II-3-2-6). Among Asian countries, the number in China is increasing remarkably and rapidly, and that in ASEAN countries is gradually increasing.²⁴⁴

²⁴⁴ In this section, "China" indicates only the mainland and excludes Hong Kong unless otherwise stated.

Figure II-3-2-6 Changes in the number of Japanese overseas affiliates by region of the establishment



Source: Basic Survey on Overseas Business Activities (METI)

Looking at the most recent point of time (FY2016), about 8,300 companies, nearly 80% of Japanese manufacturers in the world outside Japan, are located in the Asian region, and particularly many of them are located in China and ASEAN countries (Table II-3-2-7, Figure II-3-2-8). By industry, machinery manufacturing industries such as transportation equipment and information and communication electronics equipment account for one half, followed by iron and steel, chemicals, etc. Also, as we describe later, not only companies mainly manufacturing final goods but also companies manufacturing a lot of intermediate goods are developing in the Asian region, which suggests that industrial agglomerations procuring goods from Japan as well as exchanging intermediate goods in the domestic local market have been formed. It can be said that as the characteristics in the Asian region there are many relatively small sized companies compared with companies in the U.S./Europe. In the Asian region, around 8,200 non-manufacturing companies are located, accounting for close to 60% of Japanese nonmanufacturing companies in the world outside Japan, with smaller share compared with that of manufacturing. Among the non-manufacturing sector, wholesale trade accounts for more than 50%, followed by services and transport (Figure II-3-2-9). It can be understood in a way that in Asian countries manufacturers have expanded as the core, and in most cases the commerce, services, distribution, and logistics-related industries which support those manufacturers have been developing.

					(Unit: co	mpany)
	All	U.S.	Asia	China		Europe
	regions			China	ASEANIU	
All industries	24,959	2,998	16,512	6,363	6,662	2,900
Manufacturing industries	10,919	1,109	8,325	3,745	3,345	850
Chemicals	1,107	135	801	316	316	123
Iron and steel/non- ferrous metals	1,260	99	1,056	457	481	37
General-purpose machinery	1,561	179	1,150	568	376	160
Electrical/information and communication machinery	1,710	140	1,378	663	479	131
Transportation equipment	2,364	312	1,606	631	754	207
Non-manufacturing industries	14,040	1,889	8,187	2,618	3,317	2,050
Information and communications	837	138	574	226	251	93
Transport	1,447	97	745	220	381	148
Wholesale trade	7,005	858	4,369	1,426	1,516	1,145
Retail trade	680	95	428	164	150	118
Services	2,346	463	1,246	413	530	342

Table II-3-2-7 The number of Japanese overseas affiliates (FY2016)

Source: Basic Survey on Overseas Business Activities (METI)









Source: Basic Survey on Overseas Business Activities (METI)

In the U.S. and Europe, non-manufacturing affiliates are mainly established, differently from the Asian region. Among non-manufacturing sectors, there are many wholesale traders in the same way as in the Asian region. However, services account for a big share in the U.S.

Looking at the sales of overseas affiliates, manufacturing industries sales in Asian region, particularly in China, have been increasing (Figure II-3-2-10, Table II-3-2-11). However, sales volume in the U.S. is comparable to that in China and ASEAN, from which we presume that there are a lot of large-sized affiliates in U.S. In non-manufacturing industries, sales volume in the U.S. has been increasing remarkably, and the sales volume in the Asian region doesn't necessarily account for a large share.



Figure II-3-2-10 Sales changes of Japanese overseas affiliates by region

Source: Basic Survey on Overseas Business Activities (METI)



Source: Basic Survey on Overseas Business Activities (METI)

Table II-3-2-11	Sales of Japanese overseas	s affiliates	(FY2016)
------------------------	----------------------------	--------------	----------

(Unit: billion yen)

					(0	
	All regions	U.S.	Asia	China	ASEAN10	Europe
All industries	257,647	80,759	111,885	39,701	50,253	36,561
Manufacturing industries	123,636	30,316	67,203	27,419	28,340	13,156
Food/textiles/lumber	7,598	1,213	4,643	2,775	1,561	835
Chemicals	8,840	2,509	4,100	882	1,932	1,625
Iron and steel/non- ferrous metals	6,809	965	4,603	1,994	2,141	582
General-purpose machinery	9,662	2,376	5,634	2,583	1,992	1,455
Electrical/information and communication machinery	18,113	3,558	12,623	5,304	4,162	1,656
Transportation equipment	64,267	17,043	31,590	12,468	14,653	5,533
Non-manufacturing industries	134,011	50,443	44,683	12,282	21,913	23,404
Information and communications	2,844	530	943	162	505	1,312
Transport	2,788	359	1,381	536	593	308
Wholesale trade	95,198	33,283	35,254	10,044	16,534	19,344
Retail trade	8,066	5,455	1,826	578	696	414
Services	11,830	7,117	3,181	557	2,131	757

Note: Small-sized sectors are combined. For example, General-purpose machinery shows the total of general-purpose machinery, production machinery, and business oriented machinery. Source: *Basic Survey on Overseas Business Activities* (METI)

Although annual ordinary profit has been fluctuating greatly, the manufacturing industries have been expanding profit in the Asian region, and the non-manufacturing industries account for a large share in the U.S., in the same way as with sales (Figure II-3-2-12, Table II-3-2-13). However, particularly in the non-manufacturing industries, after the global financial crisis, profit has not grown as expected in the Asian region and Europe.



Figure II-3-2-12 Ordinary profit of Japanese overseas affiliates by region

Source: Basic Survey on Overseas Business Activities (METI)

Table II-3-2-13Ordinary profit of Japanese overseas affiliates by main industry/ region
(FY2016)

						,,
	All	U.S.	Asia	China		Europe
All industries	12.221	2.618	6.208	2.424	2.676	1,281
Manufacturing industries	6,712	1,232	4,479	1,889	1,818	507
Food/textiles/lumber	501	91	280	129	117	77
Chemicals	1,170	494	353	65	167	160
Iron and steel/non- ferrous metals	234	60	155	61	78	17
General-purpose machinery	517	113	348	162	134	57
Electrical/information and communication machinery	665	93	550	237	205	18
Transportation equipment	3,237	346	2,486	1,114	996	142
Non-manufacturing industries	5,508	1,386	1,729	535	857	774
Information and communications	95	6	29	8	4	57
Transport	119	17	46	19	17	25
Wholesale trade	2,282	597	1,211	431	543	272

(Unit: billion yen)

Retail trade	93	63	14	▲ 14	20	11
Services	791	414	245	50	149	186

Notes: 1. Small-sized sectors are combined. For example, General-purpose machinery shows the total of general-purpose machinery, production machinery, and business oriented machinery.

2. In case of concealed data, numerical values are displayed substituting with similar data to the utmost. For example, the U.S.'s data are substituted with North America's.

Source: Basic Survey on Overseas Business Activities (METI)

Further, moving forward from by region to by country, the number of affiliates in China is remarkably the most, followed by Asian counties such as Thailand, Indonesia, and Vietnam (Figure II-3-2-14). Actually, among the top ten countries, nine of them are Asian countries. Also, sales volume is displayed as well; two countries, the U.S. (the top) and China (second) are remarkable, leaving followers, Thailand (third) and others, in the far distance. Looking at the top 10 countries for sales, in addition to Asian countries, Mexico (fifth) and Canada (seventh) are listed. This suggests the existence of GVC with the U.S. at its center. Among European countries U.K. (ninth) is listed as one of the top 10 countries.

Figure II-3-2-14 Development of Japanese manufacturing overseas affiliates by country (FY2016)



Note: Top 20 countries/areas are displayed in descending order of the number of affiliates. Source: *Basic Survey on Overseas Business Activities* (METI)

We look at the profit ratio of Japanese overseas affiliates. In FY2016, ordinary profit ratio in the Asian region is on a level higher than the U.S. and Europe (Figure II-3-2-15). By industry, the ratio of the manufacturing is higher than that of non-manufacturing, for all regions.



Figure II-3-2-15 Ordinary profit ratio of Japanese overseas affiliates (FY2016)

Source: Basic Survey on Overseas Business Activities (METI)

2. Development of GVC with Asia in its center

Our examination has shown that Japanese overseas affiliates have been expanding in both number of affiliates and sales volume in the Asian region, with manufacturing at the center. From here we move the analysis forward while focusing on Japanese overseas affiliates in the Asian region.

First, we will look at features (part suppliers or contractors of assembling work, size of enterprises, intra-firm transaction ratio, etc.) of Japanese manufacturing overseas affiliates operating in the Asian region in comparison with affiliates located in Europe and the U.S.

Then we examine the GVC with Asia at its center from two viewpoints. Firstly, from the viewpoint of Japanese overseas affiliates, we will consider procurement from Japan, sales destinations of products, etc. Secondly, from the viewpoint of value added exported from Japan, we survey final demand places, and the flow of Japan's value added.

To begin with, from the viewpoint of Japanese manufacturing overseas affiliates, we look at sales volume and procurement volume from Japan (exports from Japan) by location region. Initially, sales of overseas affiliates located in the U.S. accounted for a large share; however, it drastically declined triggered by the global financial crisis, and the current situation indicates that sales in the Asian region, particularly in China, have been catching up (Figure II-3-2-16). In addition to the increase of sales of overseas affiliates in the Asian region, their procurement amount from Japan has also been expanding in general.²⁴⁵

245 Taking a closer look, as local procurement has expanded, procurement from Japan has not been





Source: Basic Survey on Overseas Business Activities (METI)

Next, we classify overseas affiliates by the character of main products (final goods or intermediate goods) focusing on machinery manufacturing industries. In the Asian region, many of both companies mainly producing final goods (typically companies of assembling work) and those mainly producing intermediate goods (part suppliers) are developing (Figure II-3-2-17).²⁴⁶ This suggests the existence of supply chains which import necessary intermediate goods from Japan and are also able to procure them locally. In the previous analysis, we found a large number of overseas affiliates in the Asian region compared with sales volume; seemingly that's because along with companies of assembling work, a lot of part suppliers (particularly, of information and communication electronics equipment and transportation equipment) are operating in the Asian region.

expanding like in the past. This point will be mentioned in the next section.

²⁴⁶ At the survey, it was asked if main products correspond to final goods or to intermediate goods; therefore, answered goods are not necessarily solely produced. It was displayed as a guide.



Figure II-3-2-17 The number of Japanese overseas affiliates (machinery manufacturing) by main products (FY2016)

Notes: 1. Asked if main products are final goods or intermediate goods.

- 2. Here, manufacturing companies of machinery are displayed. About 9,000 manufacturers answered, and among them, machinery manufacturers total about 4,700 companies.
- 3. General-purpose machinery indicates the total of general-purpose machinery, production machinery, and business oriented machinery.

Source: Basic Survey on Overseas Business Activities (METI)

Actual comparison of company size of overseas affiliates (manufacturing) by location region is displayed in Figure II-3-2-18. It can be seen that affiliates established in the Asian region account for a greater share of companies with a small-sized capital base in comparison with affiliates in Europe and the U.S.

Figure II-3-2-18 Distribution of company size of Japanese overseas affiliates (FY2016)



Source: Basic Survey on Overseas Business Activities (METI)

Further, let's consider from the standpoint of parent companies in Japan. Overseas affiliates' procurement from Japan corresponds to the export of intermediate goods such as key components to overseas affiliates from the standpoint of parent companies. Export to affiliated companies (intracompany transactions), which have capital relationships in general, account for a large share of export of domestic manufacturers.²⁴⁷ According to *Basic Survey of Japanese Business Structure and Activities* (METI), the exports of domestic manufacturers to overseas affiliates accounted for 56% of their total exports in FY2016 (Figure II-3-2-19).

²⁴⁷ In *Basic Survey of Japanese Business Structure and Activities*, parent companies, affiliates, and associated companies are regarded as affiliated companies. Here, affiliates are companies of which more than 50% of voting rights are owned by a company (parent company). Also, affiliates encompass a company of which more than 50% of voting rights are owned by the affiliates or by the parent company and the affiliates in total, and a company which is substantially controlled over its operations even when 50% or less of voting rights are owned. Associated companies are companies of which voting rights of 20% or more and 50% or less are owned by a company (parent company). Also, a company on which the parent company has great effect through owning 15% or more of its voting rights is considered an associated company. Additionally, in the case of foreign-affiliated companies located in Japan, exports to affiliated companies includes exports to its parent company located in its home country.



Figure II-3-2-19 Exports of domestic manufacturing companies (to affiliated/non-affiliated companies)

Source: Basic Survey of Japanese Business Structure and Activities (METI)

Looking over time, because exports to non-affiliated companies increased faster in the 2000s until the global financial crisis, the share of exports to affiliated companies gradually decreased. However, after the global financial crisis, while exports to non-affiliated companies didn't grow as expected, exports to affiliated companies increased steadily. As a result, the share of exports to affiliated companies (intra-company transactions) has been increasing.

Looking at the share to affiliated companies by location regions, the share to the affiliates in North America is the largest, followed by the share to those in Europe. The share to affiliates in the Asian region and China is relatively small. The share to affiliated companies has remained on an upward trend in the all regions of Asia, North America, and Europe since 2011, although it decreased in Asia in 2016 (Figure II-3-2-20).



Figure II-3-2-20 Ratio of exports to affiliated companies of domestic manufacturing companies

Source: Basic Survey of Japanese Business Structure and Activities (METI)

By industry type, the share to affiliated companies in the machinery-related sector, such as electronic components, transportation equipment, electrical machinery, and information and communication electronics equipment, is large, which suggests the possibility that an international division of work within a company group is being carried out. On the contrary, the share to affiliated companies in the materials-related sector, such as lumber/wooden products, metal products, plastics, ceramics/clay/stone, non-ferrous metals, and leather, is small (Figure II-3-2-21).



Figure II-3-2-21 Exports to affiliated companies of domestic manufacturing companies (FY2016)

Source: Basic Survey of Japanese Business Structure and Activities (METI)

Let's take into consideration GVC of those Japanese manufacturing overseas affiliates. The development of Japanese manufacturing overseas affiliates by region, their sales volume by location region, procurement amount from Japan, etc. are displayed in Figure II-3-2-22. As we have already examined, overseas affiliates of Japanese manufacturing are mostly developing in the Asian region and the sales volume is also large in the region.



Figure II-3-2-22 Sales/procurement of Japanese manufacturing overseas affiliates (FY2016)

Source: Basic Survey on Overseas Business Activities (METI)

It is considered that intermediate goods such as key components are supplied from parent companies in Japan, which correspond to starting points of GVC, to overseas affiliates. For example, in the Figure, Japanese manufacturing affiliates in China are procuring goods of 3.5 trillion yen from Japan. In that case, Japanese affiliates are utilizing not only the intermediate goods procured from Japan but also intermediate goods procured locally. The products are sold locally as well as exported to the same region, Japan, Europe, and America. In the case in China, among total sales of around 27 trillion yen, around 15 trillion yen is sold locally in China, around 7 trillion yen to the Asian region, and around 5 trillion yen to Japan. On this occasion, some overseas affiliates supply intermediate goods also to other overseas affiliates. Such a series of flow of goods corresponds to GVC.

First, let's think about the procurement from Japan. Japanese manufacturing overseas affiliates are purchasing just over 20% of required materials for production activities from Japan, almost independently of their location (Figure II-3-2-23). As other supply sources, local sources within the country account for the greatest share, and sources in the same region (for example, if located in Asia, sources in the Asian region) come in second place. Additionally, in Europe where economic integration is advancing, procurement within the European region is reaching a scale comparable to local procurement in the country. The share of procurement from Japan is showing a tendency to gradually decrease annually (details about this point will be mentioned in the next section).



Figure II-3-2-23 Supply sources of Japanese manufacturing overseas affiliates (FY2016)

Source: Basic Survey on Overseas Business Activities (METI)

When we consider the region as a sales market, domestic sales in the location country are generally the highest for affiliates in all regions of Asia, North America, and Europe, and sales to the same region where the affiliates are located are the next. In case of Asia, exports to Japan are also large. In case of North America and Europe, exports to Japan are limited. The supposed reason is that there are large local markets in North America and Europe and significant transportation cost is required for export to Japan because of the long distance. On the other hand, sales crossing over regional borders such as from Asia to North America are unexpectedly small compared with the entire sales scale.

Looking at the details, we find that there is difference of composition of the sales market depending on the region of their location. For example, domestic sales of Japanese manufacturing affiliates located in the U.S. are overwhelmingly large, reflecting the large U.S. market (Figure II-3-2-24). However, after the global financial crisis, both volume and share of domestic sales have declined drastically. Nevertheless, most recently, domestic sales accounted for around 70%, and sales to other North American countries (Canada) accounted for around 20%. Whereas, in the case of location in Europe, domestic sales and sales to the European region are close to even, and the supposed reason is the liberalization of cross-border movement of people, goods, and capital. Further, the share of the European region has been gradually increasing in the 2010s. Shares of sales to North America, Asia, and Japan are also increasing, although slightly.



Figure II-3-2-24 Changes in sales by market region of Japanese manufacturing overseas affiliates



Japanese manufacturing affiliates located in Asia have been clearly showing an increasing trend of sales in comparison with those in Europe and America; sales have been increasing with particularly local domestic sales at the center. As a result, shares of sales to Japan, Asia, Europe, and America have

decreased and shares of domestic sales have been increasing. However, there is also a tendency of increasing share of sales to the Asian region since 2012. Most recently, local domestic sales accounted for around 50%, sales within Asia accounted for just over 20% and sales to Japan accounted for just under 20%. Sales to North America and Europe from outside of the region were limited to 1-2% respectively.

There are concerns that overseas affiliates could be affected by the U.S.'s trade restrictive measures against China. Here, we survey Japanese companies located in China, focusing on manufacturing industries. The number of manufacturing affiliates located in China is around 3,700, and their sales volume is around 27.4 trillion yen (as of FY2016). Looking at sales destination, local sales accounted for more than half and exports accounted for 44.9% (Table II-3-2-25). Among the exports, exports to Asia (excluding Japan) accounted for 24.4%, exports to Japan accounted for 16.7%, and exports to North America (U.S. and Canada) accounted for 1.1%. The volume of direct exports to North America is limited, although it cannot be said definitely, because there may be also effects through supply chains as in a case where some intermediate goods might be sold to other affiliates in China (a part of domestic sales) and their finished goods might be exported.

(Unit: %	
	Share
Local sales	55.1
Exports	44.9
Japan	16.7
North America	1.1
Asia	24.4
Europe	1.8
Others	0.9

 Table II-3-2-25
 Sales partners of Japanese manufacturing affiliates in China (FY2016)

Note: North America is composed of the U.S. and Canada. Source: *Basic Survey on Overseas Business Activities* (METI)

Further, the degree of the impact by industry including the volume of procurement from Japan and sales to North America is illustrated in Figure II-3-2-26. The vertical axis reflects share of exports to North America against total sales, the horizontal axis reflects share of procurement from Japan against total procurement volume, and the size of circle reflects the volume of exports to North America. Industries located on the upper side of the vertical axis are more susceptible to the U.S.'s trade restrictive measures against China, and industries located further to the right on the horizontal axis have a higher possibility of having an impact on procurement from Japan (exports to China from Japan). Naturally, the larger the circle, the larger the impact that could be caused. Looking at this Figure, by industries, exports of transportation equipment to North America are the highest, followed by information and communication electronics equipment and electrical machinery. Among them, export share of electrical machinery to North America is relatively high. Information and communication electronics equipment from Japan (export to China from Japan), as more than 40% of

materials are procured through import from Japan.



Figure II-3-2-26 Exports to North America by main industries of Japanese manufacturing affiliates in China (FY2016)

Notes: 1. China indicates only the mainland. However, transportation equipment is indicated by substituted data including Hong Kong. North America is composed of the U.S. and Canada.

2. The size of circle reflects export volume to North America.

Source: Basic Survey on Overseas Business Activities (METI)

In the same way, Japanese manufacturing affiliates located in the U.S. are indicated in Table II-3-2-27. The number of Japanese manufacturing affiliates is around 1,100, and their sales volume is around 30.3 trillion yen. Local sales accounted for around 70%, most exports are for Canada, and exports to Asia accounted for 1.6%. By main industry, chemicals, transportation equipment, and information and communication electronics equipment account for large shares (Figure II-3-2-28).

Table II-3-2-27 Sales partners of Japanese manufacturing affiliates in the U.S. (FY2016)

	(Unit: %)
	Share
Local sales	69.4
Exports	30.6
Japan	1.9
Canada	23.8
Asia	1.6
Europe	1.6
Others	1.8

Share of import from Japan in total procurement



Figure II-3-2-28 Exports to Asia by industry of Japanese manufacturing affiliates in the U.S. (FY2016)

Share of import from Japan in total procurement



2. The size of each circle reflects export volume to Asia.

Source: Basic Survey on Overseas Business Activities (METI)

From here, we consider Japan's participation in GVCs using value added statistics, as the second viewpoint. Let's see the final destination of domestic value- added contents of Japan's exports and how they have been changing from the past. As of 2015, the U.S. was the largest final destination for Japan's value added (Figure II-3-2-29), although China was the largest export market for Japan with conventional export statistics. In the case of China, the Japan's value added meeting China's final demand is less than the Japan's gross exports to China; on the contrary, Japan's value added meeting the final demand of the U.S. is more than the gross exports to the U.S. This suggests that Japan's exports to China include a lot of intermediate goods which are processed in China and re-exported to the third countries, and on the contrary, the Japan's value added meeting the final demand of the U.S. include Japan's value added which arrives at the U.S. via third countries. The Japan's value added to meet the final demands of some Asian countries such as Republic of Korea, Taiwan and Thailand are also less than Japan's gross exports to them, and this indicates that the Asian region is integrated into the international division of production.



Figure II-3-2-29 Japan's export destinations (FY2015, gross export basis/value-added basis)

Note: Top 10 countries/areas of export value in 2015 are displayed. Source: *OECD TiVA*

In this way, from the angle of final destination (country of final demand) for Japan's value added, we look at the trend of trade partners.²⁴⁸ The exports on Japan's value-added basis expanded until 2011, excluding the time immediately after the global financial crisis, and thereafter has decreased slightly (Figure II-3-2-30). Among main destinations, the U.S. was by far the largest as of 2005; however, the U.S. decreased greatly after the global financial crisis. After that, although it has recovered to some extent, it has shown the trend of remaining flat without recovering to the level before the global financial crisis. On the other hand, Japan's value-added exports to meet the final demand of China have been increasing steadily. Comparing the two countries, although in 2005 exports to the U.S. were equivalent to twice the volume of exports to China on Japan's value-added basis, the exports to China have steadily increased, reaching almost same level as exports to the U.S. in 2009, the time just after the global financial crisis, and since then the two countries have been almost at the same level. Additionally, Republic of Korea, Taiwan, and Germany ranked third through fifth, but they were far behind the top two countries.

²⁴⁸ Although there are two versions of OECD TiVA database (the 2016 Edition (1995-2011) and the 2018 Edition (2005-2015)), they cannot easily be connected because there is discrepancy between two statistics. Here, the data for 2005-2015 of the 2018 Edition is used for our analysis.



Figure II-3-2-30 Changes in Japan's value-added exports by final destination

Note: Top 5 countries/regions of Japan's value-added exports in 2015 are displayed. Source: *OECD TiVA*

Also, we look at the changes in the foreign value-added content of Japan's exports and Japan's valueadded content of the other countries' exports. Looking at the share of value-added content of Japan's exports (in global total) by major source countries, although Japan's share is the largest, it gradually decreased during the period from 2005 through 2015 and the shares of foreign source countries such as China have been increasing (Figure II-3-2-31).



Figure II-3-2-31 Shares of value-added content of Japan's exports by major source countries/regions

Source: OECD TiVA

On the other hand, we look at the example of China for the share of Japan's value-added content in the others countries' exports. Concerning the exports from China (in global total), China's value-added share has been increasing and Japan's share has been decreasing (Figure II-3-2-32). However, the shares of the U.S. and other countries are also showing a similar declining tendency. There is a possibility that China's local companies have been growing and local procurement by major foreign affiliates is making progress. In addition, China's value added includes those produced by Japanese affiliates located in China.



Figure II-3-2-32 Share of value-added content in China's exports by major source countries/regions

Note: Top 7 countries/regions of value added are displayed. Only for China, the tenfold scale is applied. Source: *OECD TiVA*

Expanding the viewpoint further, the main movements of Japan's value added around the world are illustrated in Figure II-3-2-33. Arrows indicate Japan's value added in the exports of each country/region. In addition, the chart shows total volume of value added imported from Japan and, as a part of it, final demand volume for final consumption/capital investment in the country/region. It is considered that the Japan's value added not demanded in the country/region is re-exported, in the form of products which are processed/assembled with intermediate goods of Japan.²⁴⁹

249 It appears that increase/decrease of inventory in the country/region, errors, etc. are partly included. 359



Figure II-3-2-33 Flow of Japan's value added around the world

As destinations of Japan's exports on a value-added basis, the U.S. and China are remarkably large, followed by Republic of Korea, Taiwan, and East Asian countries such as members of ASEAN. In the case of East Asia, generally speaking, a large part of imported value added from Japan is re-exported in the form of processed/assembled products, suggesting that international division of production is going on in the background.²⁵⁰ In addition, naturally, Japan's value-added share in the export volume from Japan is large and Japan's value-added share in the re-export volume from East Asian countries is small.

Looking at the movement of Japan's value added being re-exported in this way, the flow of GVCs from Japan through China reaching the U.S. can be seen as mentioned in the Section 2 of Chapter 1. In addition, the flow from Japan through ASEAN or Mexico reaching the U.S./EU can also be seen. Within the East Asia, Japan's value added is moving around countries participated in GVCs.

We should also be careful for the Japan's value added, which are demanded as final consumption or gross capital formation in individual country. For example, in case of exports from Japan to China, Japan's value added used for gross capital formation within China is larger than Japan's value added included in the exports from China to the U.S. This is consistent with recent trends in Japan's exports to China, not only the exports of electronic components decreased, but also the exports of semiconductor

Source: OECD TiVA

²⁵⁰ In the case of China, there is some discrepancy of numerical values between Japan-side's value-added exports to China (139.2 billion dollars) and China-side's value-added imports from Japan (91.3 billion dollars). Here, in order to display China's imports from individual countries, China-side's value-added import data are used in a unified manner, although there is a possibility of underestimation.

manufacturing equipment and machine tools are influenced, as we have seen in Section 1 of this Chapter.

Column 9 Worldwide activities of US enterprise

(1) The number of U.S. companies operating overseas

In this section so far we analyze overseas development of Japanese companies; with that in mind, here we survey the movement of overseas development of U.S. multinational companies.²⁵¹

As with Japanese companies, U.S. multinational companies have also been actively developing overseas, with about 34.9 thousand companies operating overseas as of 2016 (preliminary figures).

Compared with the situation as of 2001, the number of overseas affiliates has increased by nearly 13,000. Looking at recent trends, the number of about 34.3 thousand in 2014 steadily increased to about 34.5 thousand in 2015 (Figure Column 9-1). Also, U.S. direct overseas investment balance has been on an increasing trend from the beginning of the 2000s, so it can be seen that U.S. companies have been actively increasing overseas investment (Figure Column 9-1).

Figure Column 9-1 Changes in the number of U.S. overseas affiliates and in the balance of overseas direct investment



Note: The banking business is excluded through 2008.
 During the period from 2013 through 2014, the number of companies seems to have increased as the capture rate increased. Preliminary values are used for 2016.
 Source: U.S. Department of Commerce (BEA)

By the number of companies by industry type, manufacturing industries account for about 30% of

²⁵¹ As of 2015, total assets of overseas affiliates of which more than 10% of voting rights are owned by U.S. multinational companies were 3.3 trillion dollars, their sales were 3.0 trillion dollars, and the number of their employees was 6.49 million. Among those, assets of MOFA (Majority Owned Foreign Affiliates) of which more than half of voting rights are owned were 2.8 trillion dollars, their sales were 2.5 trillion dollars, and the number of their employees was 5.42 million, so each item accounts for nearly 80% of the amount for all overseas affiliates. Here overseas affiliates of which more than half of voting rights are owned are called "Overseas affiliates" or "Local affiliates."

the total, and among manufacturing industries, companies of chemicals, computer/electronic components-related, and machinery are actively developing overseas (Figure Column 9-2, Table Column 9-3). Looking at non-manufacturing, the number of companies in the finance and insurance industry is especially large, followed by wholesale trade and information and communications (Table Column 9-3).



Figure Column 9-2 Share of the number of U.S. overseas affiliates by industry type (2016)

Note: Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)

Table Column 9-3	Number of U.S.	overseas affiliates	by industry	y type	(2016)	ļ
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(Ui	nit: company)
Manufacturing industries	10,639
Chemicals	2,603
Computer/electronic components	1,560
Machinery	1,152
Transportation equipment	918
Others	4,406
Non-manufacturing industries	24,242
Mining	1,121
Wholesale trade	3,930
Retail trade	713
Information and communications	1,662
Finance/insurance	5,398
Professional skills	1,904
Others	9,514

Note: Preliminary values are used for 2016.

Source: U.S. Department of Commerce (BEA)

Looking at the changes of proportion of the number of companies in manufacturing industries and non-manufacturing industries respectively, it can be seen that the proportion of manufacturing industries accounting for almost 30% of the total has been remaining almost flat (Figure Column 9-4).²⁵² From the beginning of the 2000s the structure has been unchanged where non-manufacturing industries have been accounting for nearly 70% of U.S. overseas affiliates (overseas affiliates).



Figure Column 9-4 Share of the number of U.S. overseas affiliates (Manufacturing/nonmanufacturing)

Note: The banking business is excluded through 2008.

During the period from 2013 through 2014, the number of companies seems to have increased as the capture rate increased. Preliminary values are used for 2016.

Source: U.S. Department of Commerce (BEA)

Looking at the changes by industry type, among non-manufacturing industries, the number of overseas affiliates in the information and communications industry has been increasing recently (1,480 companies in 2014 \rightarrow 1,662 companies in 2016). On the other hand, the number of affiliates in finance/insurance and wholesale trade, both of which account for large numbers of affiliates, has been remaining almost flat from the previous year (Figure Column 9-5).

²⁵² Compared with the data in 2008, the rate has slightly decreased, but it seems that this is largely due to the change of released data. Specifically, the number of companies including banking business (deposit business) which had not been included before has been indicated since 2009.



Figure Column 9-5 Changes in the number of U.S. non-manufacturing overseas affiliates by sector

Note: During the period from 2013 through 2014, the number of affiliates seems to have increased as the capture rate increased.

According to alteration of data, finance/insurance data are displayed from 2010. Preliminary values are used for 2016.

Looking by manufacturing sector, the number of affiliates in chemicals has been increasing (2,495 companies in 2014 \rightarrow 2,603 companies in 2016); on the other hand, the number in other sectors has been remaining almost flat (Figure Column 9-6).

Source: U.S. Department of Commerce (BEA)



Figure Column 9-6 Changes in the number of U.S. manufacturing overseas affiliates by sector (Companies)

Note: During the period from 2013 through 2014, the number of affiliates seems to have increased as the capture rate increased. Preliminary values are used for 2016.

Source: U.S. Department of Commerce (BEA)

Further, looking by location region, nearly 17 thousand affiliates, almost 50% of total U.S. overseas affiliates, are located in Europe. Following Europe, a large number of affiliates are located in the Asia Pacific region, nearly twice the number of affiliates in Central and South America (Figure Column 9-7).



Figure Column 9-7 Changes in the number of U.S. overseas affiliates by location region

Note: The banking business is excluded through 2008.

During the period from 2013 through 2014, the number of affiliates seems to have sharply increased as the capture rate increased owing the expansion of investigation scope. Preliminary values are used for 2016.

Source: U.S. Department of Commerce (BEA)

Looking at the number of affiliates by country, as of 2001, the number in the U.K. was remarkably large, followed by Canada, the Netherlands, and Germany. Among Asian countries, the number in Japan was the most and the next was China (Figure Column 9-8). Looking at most recently (as of 2016), although the number of affiliates in U.K. remained the highest, the difference from other countries is being reduced. Focusing on Asia, the number of affiliates located in China increased to more than twice that as of 2001 and became the highest among Asian countries (Figure Column 9-9).





Note: Asian countries colored red. Source: U.S. Department of Commerce (BEA)





(Thousand companies)

Note: Asian countries colored red. Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)

(2) Sales and sales destination

Next, looking at gross sales of affiliates (all industries), although it maintained an upward trend until 2014, it is seen to have been decreasing recently (Figure Column 9-10). Looking by country, Singapore, which indicates the highest sales volume in Asia, has been showing a decrease since its peak in 2014, and sales of affiliates located in our country hit its ceiling in 2011, when the Great East Japan Earthquake occurred. On the other hand, although sales of affiliates located in China decreased recently, in the long term it has been steadily increasing, and it can be said that the importance of affiliates located in China is increasing (Figure Column 9-11).



Figure Column 9-10 Changes in sales by region of U.S. overseas affiliates (all industries)

Source: U.S. Department of Commerce (BEA)

Figure Column 9-11 Changes in sales in the Asian region of U.S. overseas affiliates (all industries)



Source: U.S. Department of Commerce (BEA)

We now look at the changes in sales also by industry type. As mentioned previously, in terms of number of affiliates, manufacturing industries account for only about 30%, but in terms of sales volume, the manufacturing industries account for nearly 60%. The proportion of the manufacturing industries to all industries on the basis of the number of affiliates is remaining almost flat; however, the proportion of manufacturing industries on the basis of sales volume has been decreasing (Figure Column 9-12). On the other hand, the proportion of non-manufacturing industries has been increasing, although only slightly. Further, looking at the year-on-year growth rate of sales amount by industrial type, retail trade (year-on-year rate: +9.7%) and information and communications (year-on-year rate: +8.3%) are remarkably increasing. Especially, in the sector of information and communications, a positive growth rate has been steadily maintained, so that it can be seen that overseas presence of U.S. IT-related companies has been increasing (Figure Column 9-13).



Figure Column 9-12 Sales share of U.S. overseas affiliates (by industry type of parent company)²⁵³

Note: Preliminary values are used for 2016.

Because some items of data of affiliates by industry type were undisclosed, we used data by industry type of the parent company, of which data were obtainable for main industries.

Source: U.S. Department of Commerce (BEA)

²⁵³ Because some items of sales data of affiliates in main industry types were undisclosed, we used data by industry type of parent company, of which data were obtainable for main industry types.



Figure Column 9-13 Sales growth rate of U.S. overseas affiliates (by industry type of parent company)

Note: Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)

As stated earlier, although the proportion of sales of manufacturing industries to entire sales has been gradually decreasing, the manufacturing industries retain great importance and as big an influence on employment, etc. as ever, so we examine manufacturing industries in more detail in the following. Looking at the changes in sales of manufacturing affiliates, while the sales of overseas affiliates located in Europe has been showing ups and downs since 2009, overseas affiliates located in the Asia-Pacific region have basically maintained the upward trend (Figure Column 9-14).



Figure Column 9-14 Changes in sales by location region of U.S. manufacturing overseas affiliates

Note: Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)

Looking at the sales destination, domestic sales within the location country of overseas affiliates in Europe are on nearly the same scale as their sales to third countries, and their sales to the U.S. are relatively small. Also, in case of the sales of affiliates in the Asia-Pacific region, total sales of which are large following Europe, it can be seen that sales to the U.S. account for nearly 10% and domestic sales within the location country account for a large share.

On the other hand, the sales to the U.S. maintain relatively large share in total sales volume of affiliates in countries in the NAFTA region, Central and South America, etc., which are geographically close to the U.S. (Figure Column 9-15).

Figure Column 9-15 Sales of U.S. manufacturing overseas affiliates (2016)



Note: NAFTA means Mexico and Canada. Preliminary values are used for 2016. Source: Bureau of Economic Analysis

Additionally, the changes in the proportion to total sale of sales within the location country, sales to third countries, and sales to the U.S. are displayed in Figure Column 9-16, Figure Column 9-17, Figure Column 9-18, and Figure Column 9-19. First, we look at the sales destination of affiliates in Europe whose total sales are the most. As stated above, the proportion of sales within the location country and the proportion of sales to the third countries are in balance with each other, and from a long-term view, the share of sales to the location country has been declining (Figure Column 9-16).





Note: Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)

In the case of shares of sales destination of affiliates located in the Asia-Pacific region, while the proportion of sales to the location country is remaining almost flat, the proportion of sales to third countries has been increasing. The proportion of sales to the U.S. can be said to be on a decreasing trend (Figure Column 9-17).

Figure Column 9-17 Changes in share of sales destination of U.S. manufacturing affiliates (in the Asia-Pacific region)



Note: Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)

Also, focusing on China, where the sales volume is large, while the share of domestic sales within China has increased since 2009, the sales share to the third countries has declined, so it can be seen that China's presence as a market rather than as a production base has been increasing (Figure Column 9-18).



Figure Column 9-18 Changes in share of sales destination of U.S. manufacturing affiliates (in China)

Note: Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)

On the other hand, in case of affiliates located in the Central and South America region, which is geographically close to the U.S., the sales share to the U.S., the sales share to the location country, and the sales share to the third countries have been remaining almost flat, and the composition of sales destination has remained unchanged. However, the proportion of exports to the U.S. is relatively large because of lower transportation cost compared with other regions (Figure Column 9-19).

Figure Column 9-19 Changes in share of sales destination of U.S. manufacturing affiliates (in Central and South America)



Note: Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)

Further, we focus on affiliates located in China, where the number and sales of affiliates have been growing. The horizontal axis indicates the proportion of export volume to the U.S. to total sales amount of overseas affiliates located in China, the vertical axis indicates the proportion of procurement from the U.S., and the size of a circle indicates the total sales volume in Figure Column 9-20. First, focusing on sales scale, it can be seen that sales of computer/electronic components, chemicals, transportation equipment, etc. are large. The industry types of large proportion of export to the U.S. are electrical machinery, computer/electronic components, etc. Further, in the case of the proportion of imports from the U.S. to total sales (procurement rate from U.S.), the proportion of transportation equipment is large.



Figure Column 9-20 Exports to U.S. of U.S. manufacturing affiliates in China (2016)

Note: The size reflects total sales amount in China. Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)

Looking at the long-term transition, the proportion of exports to the U.S. to total sales amount has continued to be on a declining trend since 2008 (Figure Column 9-21). Since the global financial crisis, there is possibility that the presence of the U.S. market for U.S. manufacturing affiliates located in China has been weakening. Also, the proportion of the procurement amount from the U.S. to total sales has continued to be on a downward trend although it increased temporarily in 2010, so it can be said that the ability to procure within the located country without importing from the U.S. has increased from before.





Note: Preliminary values are used for 2016. Source: U.S. Department of Commerce (BEA)